WHAT IS CLAIMED IS:

1. An apparatus for applying a viscous material, comprising:

a syringe for holding a viscous material;

a pressure apply device for applying pressure in an interior of the syringe;

an application member for receiving and guiding the viscous material forcedly supplied by the pressure;

a supply tube, connecting the syringe and the application member, for supplying the viscous material from the syringe to the application member;

a discharge shaft inserted in an interior of the application member extending in an axial direction thereof and provided at one end thereof with a screw-like portion rotatable around a longitudinal axis thereof to forcedly move the viscous material guided by the application member in the axial direction;

a nozzle for discharging the viscous material forcedly moved by the rotation of the discharge shaft;

a rotation mechanism for rotating the nozzle around the axis;

a holding device for firmly holding a substrate onto which the viscous material is applied, and

a controller,

wherein, under control by the controller, either

or both of the nozzle and the holding device are moved to determine relative positions thereof, and the nozzle is moved down to discharge and then apply a predetermined volume of the viscous material onto a predetermined position of the substrate,

wherein the supply tube is connected to the application member so that the supply tube is rotated together with the application member.

2. The apparatus according to claim 1, wherein the supply tube is made from a flexible tube of a synthetic resin.

3. An apparatus for applying a viscous material, comprising:

a syringe for holding a viscous material;

a pressure apply device for applying pressure in an interior of the syringe;

a nozzle for discharging the viscous material forcedly supplied by the pressure;

a holding device for introducing and firmly holding a substrate onto which the viscous material is applied, and

a controller,

wherein, under control by the controller, either

or both of the nozzle and the holding device are moved to determine relative positions thereof, and the nozzle is moved down to discharge and then apply a predetermined volume of the viscous material onto a predetermined position of the substrate,

wherein a thermal equipment is provided in the vicinity of the nozzle for keeping a temperature in the vicinity of the nozzle substantially at a predetermined value.

4. An apparatus for applying a viscous material, comprising:

a syringe for holding a viscous material;

a pressure apply device for applying pressure in an interior of the syringe;

a application member for receiving and guiding the viscous material forcedly supplied by the pressure;

a supply tube, connecting the syringe and the application member, for supplying the viscous material from the syringe to the application member;

a discharge shaft inserted in an interior of the application member extending in an axial direction thereof and provided at one end thereof with a screw-like portion rotatable around a longitudinal axis thereof to forcedly move the viscous material guided by the application member

in the axial direction;

a nozzle for discharging the viscous material forcedly moved by the rotation of the discharge shaft;

a holding device for firmly holding a substrate onto which the viscous material is applied, and

a controller,

wherein, under control by the controller, either or both of the nozzle and the holding device are moved to determine relative positions thereof, and the nozzle is moved down to discharge and then apply a predetermined volume of the viscous material onto a predetermined position of the substrate,

wherein a thermal equipment is provided in the vicinity of the nozzle or the inlet of the application member for keeping the temperature in the vicinity of the nozzle or the inlet of the application member for receiving the viscous material substantially at a predetermined value.

5. The apparatus according to claim 3, wherein a rotation mechanism is provided for rotating the nozzle around the axis.

6. The apparatus according to claim 3, wherein the thermal equipment comprises either or both of a heating element and a cooling element, a temperature-detecting

means, and a control unit.

7. The apparatus according to claim 6, wherein the heating element comprises a rubber heater.

8. The apparatus according to claim 6, wherein the cooling element comprises an air nozzle for blowing cooled air.

9. The apparatus according to claim 6, wherein the heating element and the cooling element comprise a thermoelectric cooling element.

10. The apparatus according to claim 6, wherein the controller functions as the control unit.

11. A viscous material-applying apparatus comprising:

a syringe for holding a viscous material;

a pressure apply device for applying pressure in an interior of the syringe;

a application member for receiving and guiding the viscous material forcedly supplied by the pressure;

a supply tube, connecting the syringe and the application member, for supplying the viscous material from the syringe to the application member;

a discharge shaft inserted in an interior of the application member extending in an axial direction thereof and provided at one end thereof with a screw-like portion rotatable around a longitudinal axis thereof to forcedly move the viscous material guided by the application member in the axial direction;

a nozzle for discharging the viscous material forcedly moved by the rotation of the discharge shaft;

a holding device for firmly holding a substrate onto which the viscous material is applied, and

a controller,

wherein, under control by the controller, either or both of the nozzle and the holding device are moved to determine relative positions thereof, and the nozzle is moved down to discharge and then apply a predetermined volume of the viscous material onto a predetermined position of the substrate,

wherein a locking mechanism for locking the application member into a hollow cylindrical spline shaft which is a member for holding and moving up and down the application member comprises a pair of J-shaped grooves each of which extends from one end of the spline shaft along an axial direction thereof, and a pair of pins each of which is fixed vertically to the application member for being inserted in each of the J-shaped grooves, and the

locking mechanism locks the application member by inserting each of the pins into one end of each of the J-shaped grooves formed in the end portion of the spline shaft, sliding it along the J-shaped groove, and making it contact with the other end of the J-shaped groove.

12. The apparatus according to claim 11, further comprising a rotating mechanism for rotating the nozzle around the axis.

13. A method for applying a viscous material, comprising the steps of:

discharging a predetermined volume of the viscous material from a nozzle to a predetermined position of a firmly held substrate for receiving the viscous material; and

applying the viscous material on the predetermined position of the substrate,

wherein the viscosity of the viscous material is kept substantially constant by keeping the temperature in the vicinity of the nozzle substantially at a predetermined value to thereby stabilize the volume of the viscous material applied.

14. The method according to claim 13, wherein the

viscous material is discharged from the nozzle by applying air pressure.

15. The method according to claim 13, wherein the viscous material is discharged from the nozzle by forcedly moving the viscous material filled in a thread groove of a screw-like portion in association with the rotation of the screw-like portion.

16. The method according to claim 13, wherein either or both of a rubber heater and an air-blowing nozzle is used for keeping the temperature at least in the vicinity of the nozzle substantially constant.

17. The method according to claim 13, wherein a thermoelectric cooling element is used for keeping the temperature at least in the vicinity of the nozzle substantially constant.